What is claimed is :

1. An image pickup apparatus, comprising:

a focus lens;

a rotatable ring member;

a detection device that detects a rotating operation state of said ring member;

a control device that causes said focus lens to be moved and stopped in an optical axis direction thereof based on results of the detection by said detection device; and

a responsiveness control device that controls responsiveness of linear changes in focus to the rotating operation state of said ring member detected by said detection device in accordance with at least depth of focus.

2. An image pickup apparatus as claimed in claim 1, comprising:

an optical lens group including said focus lens;

a recording device that records a picked-up image picked up via said optical lens group onto a recording medium, and

wherein said responsiveness control device controls the responsiveness of linear changes in focus to the rotating operation state of said ring member detected by said detection device in accordance with the depth of focus that has been corrected based on a

pixel density of the picked-up image and a pixel density of a recorded image to be recorded onto the recording medium.

3. An image pickup apparatus as claimed in claim 1, wherein said responsiveness control device controls the responsiveness of linear changes in focus to the rotating operation state of said ring member detected by said detection device in accordance with exposure time.

4. An image pickup apparatus as claimed in claim 1, wherein said responsiveness control device controls responsiveness of a linear focusing movement amount of said focus lens as the responsiveness of linear changes in focus.

5. An image pickup apparatus as claimed in claim 1, wherein said responsiveness control device controls responsiveness of a linear focusing speed of said focus lens as the responsiveness of linear changes in focus.

6. An image pickup apparatus as claimed in claim 1, wherein said detection device comprises a photoelectric conversion type sensor.

7. An image pickup apparatus as claimed in claim 1, wherein said detection device comprises a magnetic type sensor.

8. An image pickup apparatus as claimed in claim 1, wherein said ring member is disposed in concentricity with an optical axis of said focus lens, and is mechanically disconnected from the focus lens.

9. An image pickup apparatus as claimed in claim 1, wherein said focus lens comprises an inner focus type lens unit.

10. A control method for an image pickup apparatus including at least a rotatable ring member, a detection device that detects a rotating operation state of the ring member, and a control device that causes a focus lens to be moved and stopped in an optical axis direction thereof based on results of the detection by the detection device,

the control method comprising a step of controlling responsiveness of linear changes in focus to the rotating operational state of the ring member detected by the detection device in accordance with at least depth of focus.

11. A control program for causing a computer to execute a control method for an image pickup apparatus including at least a rotatable ring member, a detection device that detects a rotating operation state of the ring member, and a control device that causes a focus lens to be moved and stopped in an optical axis direction thereof based on results of the detection by the detection device, the control method comprising a step of controlling responsiveness of linear changes in focus to the rotating operation state of the ring member detected by the detection device in accordance with at least depth of focus.